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Systems & Strategies for the '90s: Two Views of Open Systems PAGE 58

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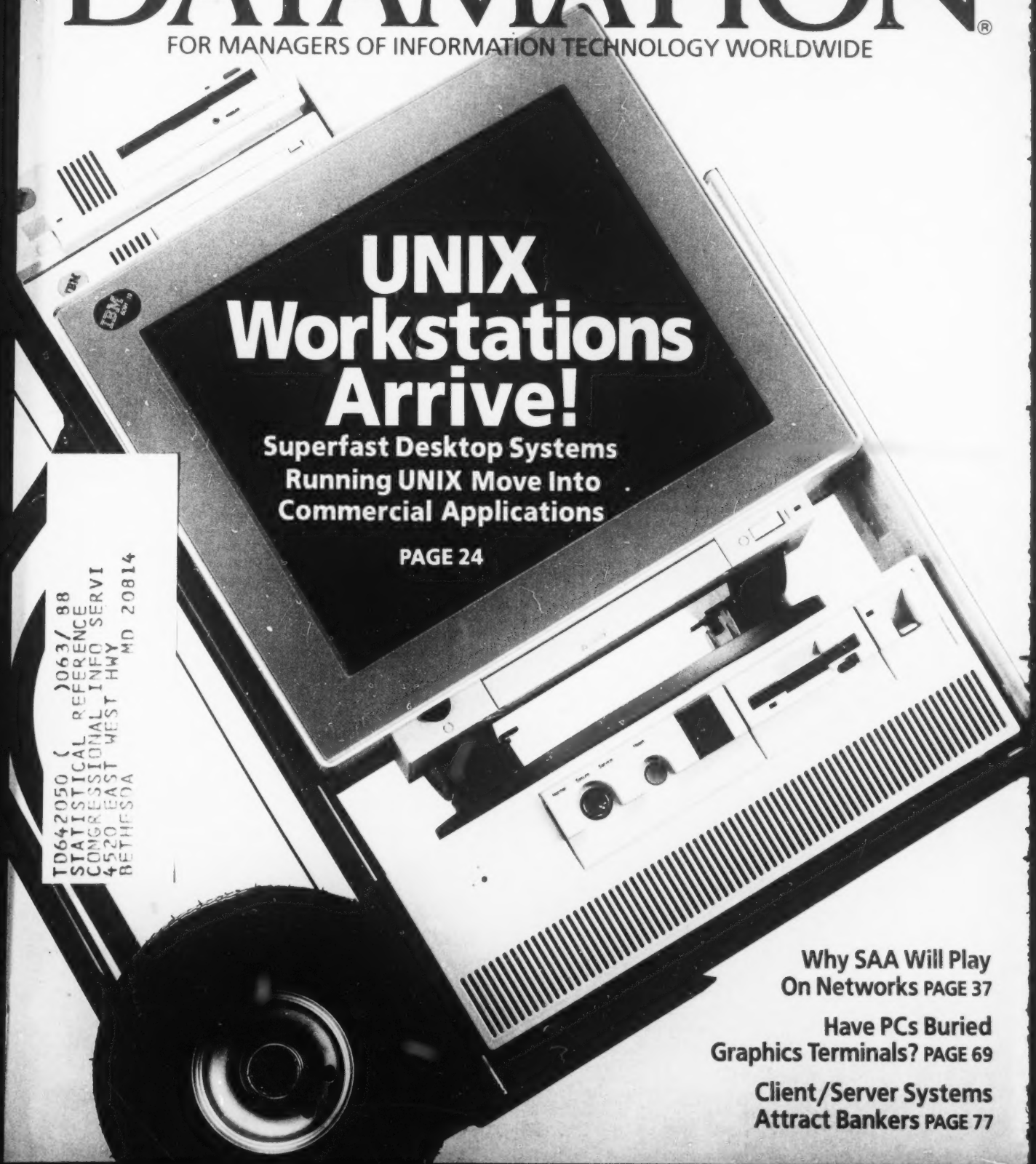

UNIX Workstations Arrive!

Superfast Desktop Systems Running UNIX Move Into Commercial Applications

PAGE 24

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Why SAA Will Play On Networks PAGE 37

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Client/Server Systems Attract Bankers PAGE 77

Plus Features on: Metropolitan Area Networks, Human Resource Software, Project Management and MCI

JUNE 1, 1990

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NUMBER 11

DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

COVER STORY

UNIX workstations are being rolled out of the lab and into the office.

UNIX Workstations Arrive! 24

BY MICHAEL R. LEIBOWITZ IS executives can no longer pass UNIX workstations off as tech toys for the boys in the lab. IBM's entry into the market and the competitive products offered by Digital, DG, HP and Sun make such systems hard to ignore when planning commercial distributed-computing strategies.

Cover photography by David Bradley

SYSTEMS & STRATEGIES FOR THE 90S

OPEN SYSTEMS

Two Views of Open Systems 58

At Covia, Open Systems Mean More Than UNIX Covia Partnership's CIO Mark Teflian says his definition of openness is based on an architectural interface to all types of systems, including proprietary ones.

At Burlington, Open Systems Mean Options At Burlington Coat Factory, director of IS Mike Prince says the attractions of open systems are vendor independence and interoperability across disparate systems.

BY BOB FRANCIS In interviews with DATAMATION's Bob Francis, Teflian and Prince discuss what open systems mean to them.

INSIGHTS ON DISTRIBUTED COMPUTING

You have to look at that whole spectrum of things. You cannot look at open systems and have that, in and of itself, be your corporate information facility.

Mark Teflian
Covia Partnership
PAGE 58

We were doing a lot of distributed processing anyway before we committed to the open systems approach. We were doing time sharing, as opposed to batch-type computing.

Mike Prince
Burlington Coat Factory
PAGE 59

People are anxious to derive the benefits of high-speed data transfer beyond local area networks, and the impact on users will be tremendous.

Arthur Papacostas
Temple University
PAGE 85

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SOFTWARE

ARCHITECTURE

Why SAA Will Play On Local Area Networks 37

BY JOHN TIBBETTS AND BARBARA BERNSTEIN IBM's mainframe-minded Systems Application Architecture is about to move down to local area networks and standard MS-DOS PCs. IBM sees the transition as anything but a demotion.

SUPPORT

Human Resources: A Strategic Partner or IS Burden? 47

BY DAVID STAMPS Once an administrative backwater, Human Resources now claims it has a strategic role to play—and it's demanding a higher level of IS support. But the size of the payoff remains to be seen.

Human resources seeks a role in strategic planning.

SYSTEMS

GRAPHICS

Have PCs Buried The Graphics Terminals Market? 69

BY JOHN McMULLEN Demand for traditional graphics terminals is slipping as the world revs up for high-end PCs with mainframe and minicomputer connections. But some contend that X-terminals will recapture the glory days of old.

J.P. Morgan's Robert Dawson wouldn't trade his PCs for graphics terminals.

COMMUNICATIONS

ARCHITECTURES

Client/Server Systems Attract Retail Bankers 77

BY BYRON BELITSOS Better support for branch staffers selling a variety of financial services to customers is the big benefit of the client/server architecture. But builders must still be aware of security issues.

NETWORKING

The Dawn of MAN 85

BY LEILA DAVIS With LANs popping up everywhere, IS managers are increasingly hard pressed to establish companywide connections. Despite ISDN, many may opt for the new Metropolitan Area Network.

Temple University's Arthur Papacostas has the right MAN for the job.

MANAGEMENT

OPERATIONS

Better Project Management In Uncertain Times 95

BY CONNIE WINKLER IS managers must tackle unforseen changes in undertaking big systems efforts. It helps to be fairly flexible, fast and forward-looking.

INTERVIEW

MCI's IS Leader Is Customer Focused 101

BY TIM MEAD MCI's Alan Ditchfield is obsessed with customers—external and internal. He's spending time with long-distance customers and swapping electronic mail messages with his peers and superiors.

INTERNATIONAL

EASTERN EUROPE

Opening Up CIM Opportunities 111

BY DAVID HEBDITCH The readiness of Eastern European manufacturers to implement new technology implies that the only things holding back rapid automation are the availability of and experience with the technology.

GREAT BRITAIN

Lloyd's Ups the Ante For Claims Processing 115

BY BORIS SEDACCA By the end of the year, the venerable Lloyd's of London expects to have all of its member businesses using a single network application to process claims.

DEPARTMENTS

Inside DATAMATION	10	Planner: Second Half 1990	123	Career Opportunities	143
Letters and Access	14	New Products	128	Company Index	151
Look Ahead	19	Information Economics	142	Ad Index	152

LETTERS

A Request From Romania

After almost twenty-five years of slavery and darkness, we were given a quiz: Can we break the chains? And we made it.

We have already started the Romanian political, economic, social and cultural *Perestroika*, while taking much care to succeed in getting new ground.

Presently, as an old manufacturer in electronics, our plant has a difficult task to complete: catch up with the European leaders in electronics and resume the relations that have been broken off with the rest of the world for such a long time.

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So, as your periodical subscription is concerned, due to circumstances beyond our control, we cannot pay for it for the time being and kindly ask you to send us the issues for 1990 without payment obligation.

Can you give us a hand?

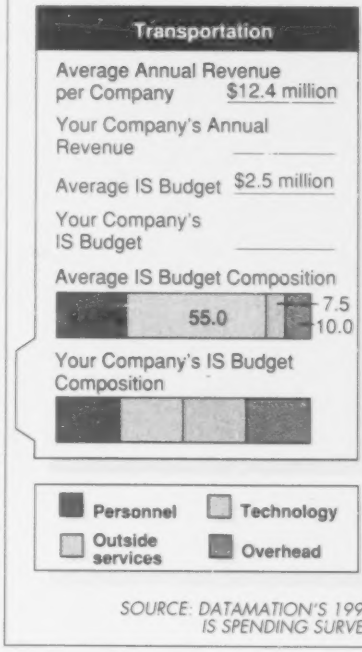
M. Săndoiu
Information Manager
Electronica Industriala
Bucharest, Romania

We are honored to send you a 1990 subscription to DATAMATION *without charge.*

—Ed.

Clarification

Here is the correct data on IS budgets for users in the transportation industry. Our April 1, 1990, story erred in reporting the IS budget figure.



SOURCE: DATAMATION'S 1990 IS SPENDING SURVEY

Those Gears Again

Wrong. The gear arrangement on the January 1990 cover *does* work. Think "speed at the circumference" instead of "gear diameter."

Wolfgang Von Thuelen
Manitoba Data Services
Winnipeg, Canada

Open Consensus

I was pleased to see in "The New Agenda for Open Systems" by Jeff Moad (DATAMATION, April 1, 1990 [p.22]) the recognition that open systems means much more than just UNIX™. The SHARE Engineering/Scientific Workstation Environment Task Force in its Final Report (SHARE SSD #346, February 1986) reached that same conclusion. The task force members constantly fought the battle of people saying, "Oh, you mean UNIX."

There is much more to an open system than just the operating system. To be successful, the entire computing environment, especially the interfaces, must be well defined, open and standardized.

Robert Rosen
Chief
Scientific & Engineering
Automation Office
United States Army
Harry Diamond Laboratories
Adelphi, Md.

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UNIX Workstations Arrive!

IS executives can no longer pass UNIX workstations off as tech toys for the boys in the lab. IBM's entry into the market and the competitive products offered by Digital, DG, HP and Sun make such systems hard to ignore when planning commercial distributed-computing strategies.

BY MICHAEL R. LEIBOWITZ

They're swift and powerful and have barreled into the world's science and engineering labs at a dizzying clip. It's hard to find a chip designer or molecular scientist who doesn't swear by the UNIX workstation sitting on his or her desk. The machines have given these professionals the power to rapidly analyze, visualize and consolidate far-flung pieces of information without getting up from their seats.

But the days of the technical community as the sole preserve for these machines are numbered. It didn't take IBM's announcement of a stunningly powerful line of workstations to convince IS executives that this technology was hot. But the heat certainly was turned up by IBM's products, a line of workstations and servers based on reduced instruction set computing (RISC) architectures and equipped with Big Blue's version of the UNIX operating system.

Just how high the temperature will get in this market is anybody's guess. Commercial sales of workstations worldwide are expected to rise from $900 million this year to $4.1 billion in three years, according to Dataquest Inc. The San Jose market research firm believes the total workstation market will be $16.2 billion in 1993—with a majority of sales ($12.1 billion) still coming from technical applications.

IS executives acknowledge that IBM's all-out entry into the RISC workstation business—it had half entered the market with its RT line of personal computers some years ago—has done something that all the technological advances and the few commercial UNIX applications to date have not: it has made UNIX workstations an accepted member of the commercial computing establishment.

"It sent a signal to some of the people high up in data processing that yes, in fact, this is the future of computing," says Judy Bond, assistant vice president of information services at Blue Cross and Blue Shield of Kansas City (Missouri). "We believe that UNIX is going to be something like water seeping into the basement," adds Wayne Garner, manager of planning and technology development for information systems at The Dow Chemical Co.

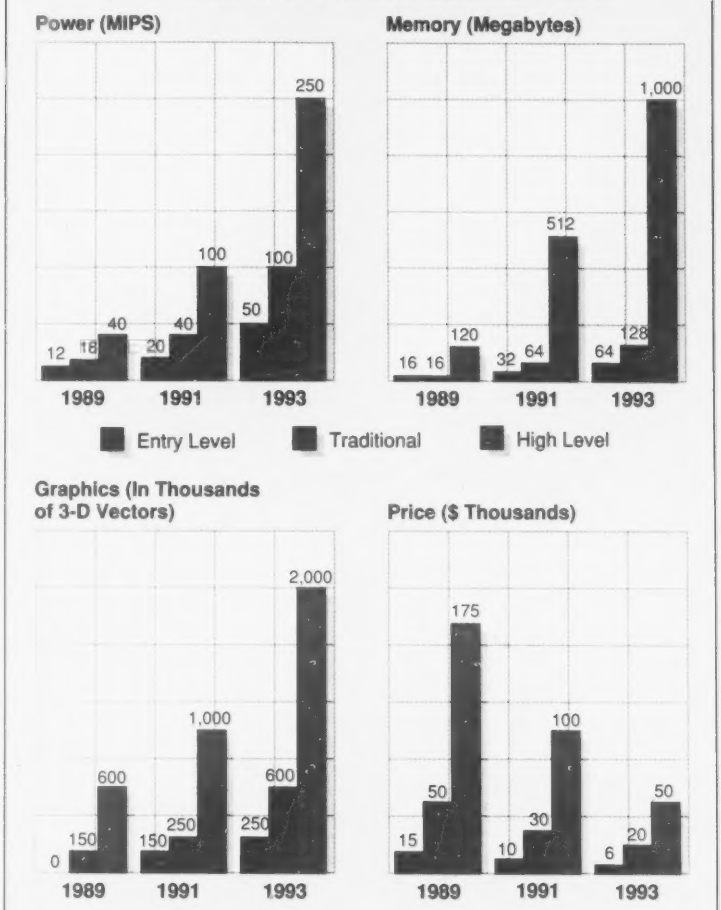
The basement—the entire foundation in many respects—of most users' computing architectures is undergoing rapid change as it is. Most companies and institutions are embracing the client/server model of distributed computing—one made possible by advances in microprocessors, operating systems and networking. They're not totally abandoning their host-based architectures of the past as much as expanding on such designs to take advantage of ever more powerful desktop systems. UNIX workstations fit the bill, competing with personal computers running MS-DOS or OS/2 operating systems.

Where Users Win Big

Users seem to be in a win-win situation vis-à-vis UNIX workstations after IBM's introduction. One obvious win: competition. Just when suppliers of PCs with powerful microprocessors such as Intel Corp.'s 80386/80486 chips or Motorola Inc.'s 68030/68040 chips thought it was safe to demand higher profit margins on their products than they did when hawking 80286- and 68020-based systems, along comes the UNIX workstation gang. Another win: IBM's announcement rivets the attention of independent software developers, whose products will eventually determine whether UNIX workstations make it in the commercial world. Not that such developers had ignored the market—Sun Microsystems Inc. already boasts of more than 2,000 software products available for its SPARCstation family of systems.

Where Is Workstation Performance Headed?

You haven't seen anything yet in the UNIX workstation field.



Source: Dataquest Inc.

The big win, however, is in performance. The bang for the buck on these boxes is hard to beat. IBM's RS/6000 POWERstation 320 offers 27.5 million instruction per second of performance for $12,995—that's $473 per MIPS, workstation fans. Digital Equipment Corp.'s 5000 family of workstations starts at $14,995 for 24MIPS ($625 per MIPS). Hewlett-Packard Co., which continues to blitz the market with new products, now offers a 12MIPS UNIX workstation for as low as $8,995 ($750 per MIPS). Even Data General Corp., which many critics had dismissed as a forgotten minicomputer supplier, has flexed its muscle in this market. DG's Aviion workstations, based on Motorola's 88000 RISC chips, start with the AV400 workstations, offering 17MIPS performance for $9,500 ($559 per MIPS). And Sun, which started this whole round of price/performance one-upmanship a year ago with its SPARCstation announcements, is expected any day now to leapfrog everybody else once again.

That's just the beginning. The future in UNIX workstation pricing and competition holds even bigger bargains. Margins on these systems will be squeezed even tighter and products developed even faster as HP, Sun and the others cope with IBM's entrance. Dataquest predicts users will be able to buy low-end workstations offering 20 to 50MIPS performance for $2,000 to $6,000 apiece by 1993. That's $100 to $120 for every million instructions per second of power.

But bargain prices also give IS executives cause to worry: Will their chief workstation supplier make enough profit to survive beyond the current product cycle? Some say there could be casualties among companies such as MIPS Computer Systems Inc., Next Inc., Silicon Graphics Computer Systems Inc. and others. "They [competitors like IBM] have stepped up the price competition significantly," says Joseph Kubat, vice president of floor networks and microprocessor systems at Securities Industry Automation Corp. (SIAC), a subsidiary of the New York Stock Exchange (NYCE). "I think a company like Sun—or almost anyone in the workstation niche—is going to be under a lot of pressure."

Sun, in fact, is the supplier most users and analysts mention when the issue of financial resources surfaces. To no one's surprise, the Mountain View, Calif., company had been burning up cash to fuel its heady growth. Some thought the company had overheated a year ago when a product transition and internal IS problems stymied quarterly growth and sapped profits. But Sun's steady track record since the second quarter of 1989 has removed a lot of those doubts.

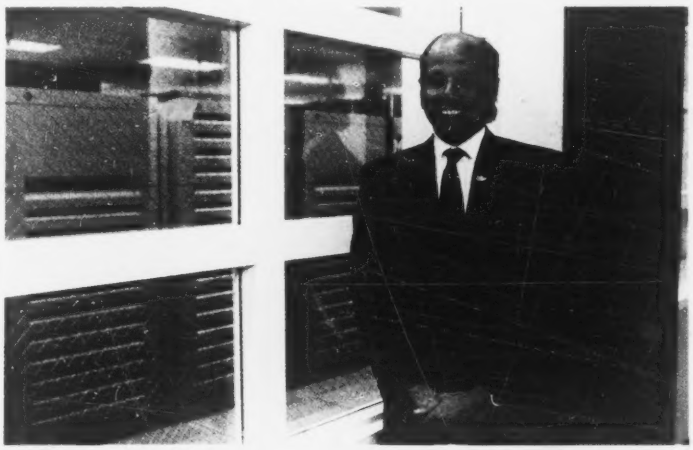
"We've been operating at gross margins in the 40 to 50% range for some time," says Edward Zander, vice president of corporate marketing at Sun. His company finished 1989 with greater than $2 billion in revenues and $36 million in earnings. With revenues approaching $200,000 per employee, he argues, Sun is so productive that it can withstand some erosion of margins and still remain profitable.

Sun and others may indeed have their mettle tested if IBM lives up to its intention of being No. 1 in the workstation market. As farfetched a goal as that seems to many, it could wreak havoc with the balance sheets of its competitors. "I don't think IBM can grow that fast," Dataquest analyst Katheleen Hurley says of IBM's intention to capture a 30% market share—and the lead—by 1993. At best, she believes, IBM will command 15% of the market in three years—still far greater than its current portion, which amounts to barely 2% of the $6.1 billion in world workstation sales. According to Dataquest's figures, Sun (at 28%) and HP (with 26%) are currently neck in neck for market leadership, with Digital (at 20%) following close behind.

> A company like Sun—or almost anyone in the workstation niche—is going to be under a lot of pressure.

Despite such leads in the market, few of those or any other workstation competitors will be able to escape the financial pressures created by IBM's new thrust in workstations. Most industry experts believe competitors will cut prices further to close deals before IBM starts shipping its RS/6000 in volume. Suppliers of workstations already are notori-

ous discounters. For example, users surveyed last fall by DATAMATION and Cowen & Co. reported receiving nearly 18% in price concessions when last purchasing workstations. Sun was offering the best deals—slashing prices 21%. Digital was discounting 17% and HP 16%, according to those responding to the survey.



SUN'S ZANDER: Sun is so productive it can withstand some margin erosion.

Photograph by Robert Foothorap/Black Star

IBM pulled no punches in its introduction of the nine UNIX-based workstations and servers that make up its RISC System/6000 family. Built around a set of advanced, internally developed RISC processors and coprocessors, the new family instantly put IBM out in front of the pack in terms of price/performance. It also lent IBM's support to the UNIX movement in general, although the RS/6000 systems do run AIX, the company's proprietary version of the UNIX operating system. The one thing that IBM couldn't give users, ready-to-run applications packages for the new system, it promised by the end of the year. The company says 1,500 applications will be available in 1990. Several thousand applications already are available for DG's, HP's and Sun's workstations—although a majority are for technical, not commercial, users.

"We thought they got it right," Kubat says of IBM's new product family, on which his staff has received a detailed briefing by the supplier. "I have people that are kind of hard-nosed with respect to evaluating this kind of announcement. They've, to a man, come back impressed."

What's impressing most IS executives about UNIX workstations isn't so much their current functionality as their future potential. In particular, they foresee a vast amount of packaged commercial software being developed for such systems beyond what already exists. Shrink-wrapped software, in fact, is one of the reasons Kubat's shop is planning to use UNIX workstations. SIAC will soon begin evaluating workstations to display, record and analyze data for use by trading specialists on the floor of the NYSE.

Declaring Vendor Independence

SIAC and other users also are jazzed about the potential for UNIX workstations to free them—and their homegrown applications—from being locked into one set of hardware. "If you use a proprietary operating system, you're gated by that vendor's internal priorities," Kubat says. He's confident that most UNIX suppliers will be able to embellish the operating system sufficiently to add value to specific applications and thereby differentiate themselves.

At Wal-Mart Stores Inc. in Bentonville, Ark., freedom is the main reason behind the company's decision to adopt UNIX workstations for a new 1,600-unit in-store system. "We went to UNIX because we wanted something that would make our code portable across different platforms," says Mark Schmidt, senior director of information services at Wal-Mart. Portability allows users to develop applications for one type of UNIX hardware platform and run it on another as long as the suppliers of each

Why UNIX Isn't for Everybody

Although IBM's entry into the UNIX workstation market is making a mark for all such systems in commercial applications, not all commercial users plan to use them. For some, there simply is little reason to change.

"We can't stop every time vendors pull rabbits out of the hat and change our plan," says Mike Schuckman, manager of information services at BHP Petroleum Americas Inc. His Houston company already had standardized on a two-platform computing architecture—IBM for commercial applications, Digital Equipment Corp. for technical matters—when IBM unveiled the RS/6000.

"UNIX-based machines would have to make a pretty compelling argument for me to want to change something that I already have," says Jim Hall, vice president of information services at New York City-based Sterling Drug Inc. He's content, for now, with his ability to distribute applications across an IBM 3090 and assorted IBM midrange machines, including several AS/400s.

"For us to just drop everything and change our strategy because of this [RS/6000] announcement, that's just not going to happen," says Harry Wallaesa, vice president of management information systems at Campbell Soup Co. in Camden, N.J. UNIX workstations represent a potential competitor to PCs for Wallaesa, who presides over a highly distributed computing environment, which includes 150 AS/400s, 2,000 PCs and an IBM 3090 mainframe.

The big question for Wallaesa in determining Campbell's workstation recipe in the future is how the competition between the UNIX and OS/2 operating systems is going to play out. "I guess what we're doing is seeing whether there are advantages to using a very powerful UNIX box, as opposed to a very powerful OS/2 box," he says.

The big win for users is in pricing. The bang for the buck on these boxes is hard to beat.

adhere to the same sets of operating systems standards.

Wal-Mart is testing an RS/6000 system, hoping to replace the IBM series 1 minicomputers currently in use at each store. Each RS/6000 unit will run up to 10 ASCII display stations, connect to point-of-sale controllers and run the store's back office. The company plans to roll the systems out to its stores this summer.

For other users, price/performance, not standards, is the dominant attraction of UNIX workstations. New York Life Insurance Co. in Manhattan, for example, is currently testing three of the new RS/6000s for a system that would move applications such as underwriting from central mainframes to workstations in the field. "It will allow us to do a lot of additional functions . . . right at the point of entry, rather than doing them on a host-based system and, in some cases, in batch mode," explains Tom Pettibone, senior vice president of information systems at New York Life. If the test is successful, New York Life will purchase as many as 1,000 RS/6000s before the end of the year.

The pace of price/performance improvements made to these systems only stands to quicken with IBM in the market, many IS executives believe. Although each of IBM's major workstation competitors denies that it has moved up product introduction schedules in response to Big Blue, at least one important customer thinks otherwise. "Their plans haven't changed, but it appears to me they're trying to accelerate them," says Don Smith, computing strategy manager for Texas Instruments Inc.'s Design Automation Division, a big user of workstations. Each of TI's UNIX workstation suppliers has been clamoring to meet with Smith and another TI executive to reassure them of their intentions to combat IBM.

But regardless of whether IBM maintains its lead in workstation price/performance or loses it to Sun or another competitor, the $63 billion computer maker has some natural advantages in attracting commercial customers to the RS/6000. The biggest defies measurement. It's called familiarity. "As a company, we've had a long-standing relationship with IBM. There's reasons to want to continue that," says New York Life's Pettibone. He's particularly assured by IBM's promise to provide additional capabilities to AIX that will help RS/6000 systems share data with computers conforming with IBM's Systems Application Architecture (370 mainfames, AS/400 midrange systems and PS/2 desktop systems).

SIAC'S KUBAT: Price competition has increased significantly.

While IS executives at Wal-Mart won't say whether IBM has a built-in advantage in a competition with Hewlett-Packard for the chain's lucrative workstation business, they do acknowledge that Big Blue is the incumbent supplier.

And even in the technical world, in which IBM has traditionally not been a major player, the company's entrance could have a significant impact. "They have an advantage in that they're a big company,"

One of the big barriers to using the new UNIX workstations will be the fact that commercial COBOL applications are so difficult to port, says George Weiss, an analyst with Gartner Group Inc. of Stamford, Conn. Most applications running on mainframe systems are written in the Common Business-Oriented Language. Porting such applications to run on UNIX platforms is a complex task that requires understanding COBOL variations between the mainframe and workstation environment and having the proper tools to do the job.

Even more challenging is adapting how most mainframe systems store files via the Virtual Storage Access Method (VSAM) to something such as an Oracle Corp. relational database on a workstation. Screen-handling changes must be made, communications protocols must be modified and the interoperability standards of Systems Application Architecture (IBM's computing bluebrint) must be adhered to. "There's a whole lot of stuff I don't think the users are fully equipped to understand or do right now," Weiss says.

Some IS executives wouldn't even bother trying to fit COBOL-written applications into a UNIX workstation shoe. "Don't give me something that repeats the sins of the past," says Sterling Drug's Hall. If he were sold on workstations, he would scrap existing COBOL applications running on the mainframe and write new ones on workstations with fourth-generation languages.

There's no point in porting mainframe COBOL applications to the new platform, agrees John Collins, vice president of management information systems at Hallmark Cards Inc. in Kansas City, Mo. Applications should be substantially rewritten upon effecting a transition to UNIX workstations to make them every bit as flexible as the market demands.

Photograph by Jill Levine

says Texas Instrument's Smith. "If they are in fact committed to a workstation strategy and a family of products, I think that carries a lot of weight. When IBM first came out with its PCs, all of a sudden it was a de facto standard. That potential, in my opinion, exists again."

New vs. Old Applications

There are, however, some technical impediments to UNIX workstations achieving the level of commercial success seen in PCs, whether those workstations are made by IBM or anyone else. For some IS executives, there are some big deficiencies that must be addressed before they put their arms around UNIX workstations. Mike Schuckman, manager of information services at BHP Petroleum (Americas) Inc. in Houston, says communications to his current systems—notably four Digital VAX minicomputers and three VAX workstations—is required of any new platform. "What we're not sure of yet is how the UNIX boxes are going to work with our VMS environment," says Schuckman, in reference to the operating system running on those VAXs. "We certainly heard that it could be done. We're being careful and waiting for other people to get some experiences there."

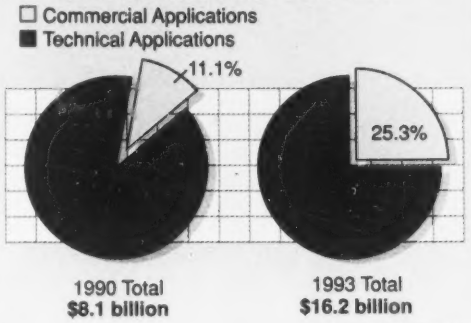
"IBM doesn't quite have all the pieces yet," agrees Bond at Blue Cross. One missing piece, she says, is a suitable way to update workstations on a network as new software releases become available. Nevertheless, the RS/6000 already is having an effect on Blue Cross' IS plans. The user has deferred redesigning some applications currently running on mainframe systems until it sees whether UNIX and workstation computing develop as industry standards. "If I was to redesign them right now, they'd be wrong," Bond says. "I might write another CICS [Customer Information Control System] application on the mainframe, and that's just not the way things are going to go."

For Bond, the route to using powerful UNIX workstations, which Blue Cross may embark on within the next several years, will involve first trying them on a small but important application such as a managed care reporting system. Bigger applications will follow as the user grows familiar with UNIX. But it will be a slow process. "I think that's the way we're going to go before I retire," Bond says, referring to her desire to someday move all applications to desktop systems. "But I don't think it's going to be tomorrow." ▭

Michael R. Leibowitz is a business writer in the San Francisco Bay area.

Workstations Take Off Commercially

Commercial applications of workstations will climb from $900 million to $4.1 billion.



Source: Dataquest Inc.

What Do You Think About UNIX Workstations?

Let us know your answers by circling the appropriate number on our reader service card.

Before IBM's announcement, were you seriously considering the UNIX workstations as a platform for commercial applications before January 1990?

YES Circle 101 **NO** Circle 102

After IBM's announcement, are you considering UNIX workstations for commercial use?

YES Circle 103 **NO** Circle 104

If yes, which supplier or suppliers are you most likely to do business with? And on which do you desire more information?

	BUSINESS WITH	MORE INFORMATION
Apple	Circle 105	Circle 106
Data General	Circle 107	Circle 108
Digital	Circle 109	Circle 110
HP	Circle 111	Circle 112
IBM	Circle 113	Circle 114
MIPS Computer	Circle 115	Circle 116
Next	Circle 117	Circle 118
PC makers	Circle 119	Circle 120
Silicon Graphics	Circle 121	Circle 122
Sun	Circle 123	Circle 124
Unisys	Circle 125	Circle 126

If no, why aren't you interested in UNIX workstations?

- Happy with existing systems. **Circle 127**
- Waiting for single, nonproprietary UNIX to emerge. **Circle 128**
- Plan to put future applications on PC platforms and operating systems—e.g. Macintosh, MS-DOS, OS/2. **Circle 129**
- Too few commercial software applications packages. **Circle 130**
- Lack of human IS resources, e.g. programmers, to manage them. **Circle 131**

Human Resources: A Strategic Partner Or IS Burden?

Once an administrative backwater, Human Resources now claims it has a strategic role to play—and it's demanding a higher level of IS support. But the size of the payoff remains to be seen.

BY DAVID STAMPS

The vice president of Human Resources is not unlike the VP of Information Systems. His or her lot in life is basically to support the line business managers and to petition other supporting players, such as IS managers, for a fair share of resources and respect. In the corporate pantheon of stars and heroes, don't expect to find many vice presidents of Human Resources. At least not yet.

Consider the following observation by management guru Tom Peters of *In Search of Excellence* fame. Peters makes a career of bashing middle-management support types such as corporate trainers, accountants and—yes—IS managers. Speaking at a business luncheon several years ago, Peters recommended keeping payroll and employee record-keeping functions far apart. Otherwise, he said, "they'll try to get together and form a Human Resources department."

A New Corporate Contender?

But Human Resources seems to have survived the abuse heaped on it over the years. Indeed, it has done more than survive; 1990 finds HR brushing off its pinstripes and rising up to announce that it intends to play a strategic role in guiding the business enterprise through the anticipated turmoil of the coming decade. As this happens, rest assured that IS will become increasingly drawn into the process.

"For most companies, it is still a new concept, but you're going to see Human Resources being a lot more closely involved in strategic planning," predicts Ron Groess, manager of benefits systems for 3M in St. Paul. Groess is also a member of the Dallas-based Association of Human Resource Systems Professionals (AHRSP), a group of about 3,000 HR managers who serve as a liaison between HR and IS. He cites statistics that HR commonly uses to polish its image: anywhere from 40 to 60% of a company's operating costs are employee related; therefore, management must understand how best to use this expensive resource.

Whether or not HR plays a strategic role, one thing is clear: in the past several years, HR has grown to become a strategic market for a veritable stampede of software vendors and consultants. *Personnel* magazine's most recent directory of HR products and services lists more than 160 companies offering some sort of human resources information systems (HRIS) product. And that's only the tip of the iceberg. AHRSP maintains a vendor list of more than 800 companies, including consultants, that pitch HR management products. That's just about one vendor for every two of AHRSP's 1,500

Illustration by Sandra Filippucci

member firms.

International Data Corp., the Framingham, Mass., industry research firm, expects the yearly market for HR software to nearly double from $398 million last year to $730 million by 1993. And while this figure includes software and maintenance for all platforms, it does not include the sizable HRIS consulting market.

An Attractive Software Market

The growing HRIS software market has attracted the attention of some big name vendors. IBM does not offer a HRIS package per se, but it did join forces this year with Price Waterhouse and San Francisco-based Tesseract Corp., a leading vendor of mainframe-based HR software, in sponsoring a 14-city tour billed as the "Financial and HR Solutions Conference." IBM's part of the show is to tout the ability of its Systems Application Architecture (SAA) and DB2 relational database to support HR applications.

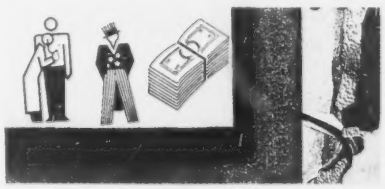
Earlier this year, Oracle Corp. of Belmont, Calif., added an HR management package called Oracle Personnel to its Oracle Financials line of business applications. According to Marc Hebert, Oracle's vice president and chief information officer—who also heads up applications development for Oracle Personnel—the HR package is an integral part of Oracle's applications strategy, even though it followed Oracle's General Ledger and Accounting applications into the market by more than a year. "We began with the strategy that we would offer a family of applications that large companies can use to run their business. We knew that meant a product that would let companies manage their employees."

Dedicating Support to HR

Judging by the size and the amount of market activity in HR software, automating many employee management tasks is indeed a serious activity. Not only are large corporations shelling out anywhere from $500,000 to $750,000 to purchase the latest in integrated HR packages, many firms have formed special IS groups dedicated to supporting HR and nothing else.

"We're just starting to see the HRIS function emerging in the past couple of years," observes Judy Dunnington, specialist with the Hunter Group, an HRIS consulting firm based in Baltimore. "It's not uncommon to find IS giving up anywhere from six to a dozen of its people and transferring them to a hybrid HR/IS group. You walk into the HR/IS department, and it looks and feels like the IS department. Except it isn't, because it reports to HR. Except it is, because it's doing all the things that IS used to do to support Human Resources."

Why is all this happening? A few years ago, when the move to upgrade old batch personnel and payroll systems began in earnest, the answer to that question was perhaps a little simpler than it is today. Then, it was easy to blame the government; the cumulative burden of state, federal and local government-reporting requirements was placing a strain on older batch systems, not to mention IS staff who found themselves perpetually scrambling to keep up with each new reporting demand.



□ HR HAS BECOME A STRATEGIC MARKET FOR A VERITABLE STAMPEDE OF SOFTWARE VENDORS.

Government compliance is still a factor today in the HR systems workload. Just ask any HR professional about Section 89 of the 1986 Tax Reform Act, which requires that companies prove that higher salaried employees are not receiving preferential benefits packages. Section 89 is believed to have prompted several million dollars' worth of software development work, only to be repealed last year just before it was to take effect. But government reporting is no longer the single factor driving HR system upgrades.

A Basket of Benefits

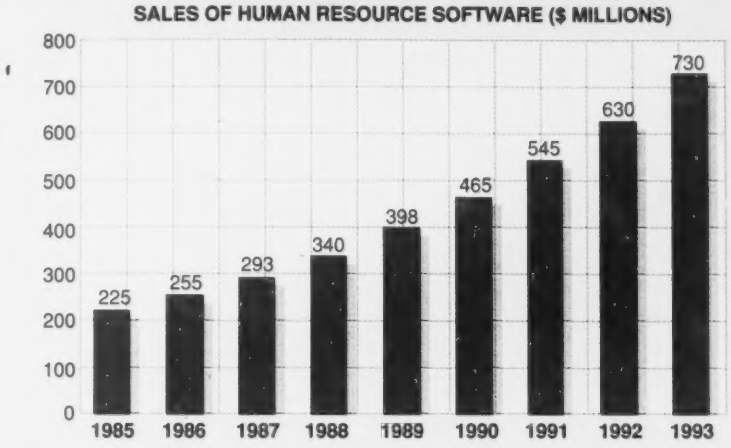
An even bigger issue is the soaring cost of employee benefits. According to the U.S. Chamber of Commerce, the average benefits package now amounts to 37% of an employee's salary (see sidebar, "The Burgeoning Cost of Employee Benefits"). At many companies, the pressing need to gain control over escalating benefits costs is what is really driving Human Resources to the forefront. "The HR function is getting a lot more boardroom attention today than it ever did before. But that's usually a sign of a perceived problem, not perceived leverage," says Bruce Coleman, president and chief executive officer of Information Science Inc., a Montvale, N.J., supplier of HR software.

One way to get a handle on the cost of benefits is to replace batch personnel and payroll systems with new integrated HRIS software—software that is geared to handle flexible, cafeteria-style benefits programs. Under such programs, employees are essentially allotted a fixed dollar amount for benefits and allowed to mix and match from a menu of benefits options. "Whether it's governmental reporting or the need to offer flexible benefits, each brings complexity to HR administration," says Coleman. "Each is driving the need for newer systems and pushing HRIS into a more prominent role."

For those who harbor any doubt that HR's job is more complicated than it used to be, just listen to Dorothy Williams, who has worked in Human Resources for

Capitalizing on the Human Resource

Keeping track of employees is a universal need not lost on the many suppliers of human resource software packages. By 1993, IDC projects that the market for U.S. vendors across all computer platforms will be $730 million.



Source: International Data Corp.

the past 14 years at Sovran Financial Corp. in Norfolk, Va., a company with over 16,000 employees.

"Ten years ago, about the only thing Personnel did for employees was to hire them, give an annual pay raise and terminate them. Once in a while, you might put someone on a leave of absence. Two to three transactions per year per employee was a lot," says Williams. "Today, we have whole new categories of employee classifications—not just full-time and part-time but casual-part-time; prime-time/optimum-hourly, for people who work 30 to 40 hours a week; special job-sharing classifications for people who work 20 hours a week. And people move in and out of these various classifications. Today, eight to 15 transactions per employee is not the least bit unusual."

The On-Line Upgrade

The need to offer flexible work schedules prompted Sovran two years ago to replace its batch personnel and payroll systems with an integrated HR package from Tesseract. Also prompting the move was the need to keep up with changing IS technology, explains Williams, who is now vice president of the newly created HRIS department.

"We needed something that was on line," says Williams. "We're spread out over 13 states today, and it takes too long to send employee information by mail. We needed a system that was date sensitive. With the old system, you could hire an employee, but his papers might not arrive until after a pay period had passed. Then a clerk had to go back and calculate retroactive pay and deductions."

☐ HUMAN RESOURCES SEEMS TO HAVE SURVIVED THE ABUSE.

Most of all, Sovran needed a system that was integrated. Because employee data are connected to so many other applications these days, just trying to enter a new employee's name in every system is an administrative nightmare. "Employee records interface with five different general ledger packages," explains Williams. "We have 50 different incentive plans, 60 different payroll deduc tion plans, 80 different earnings options. We even interface to the system that keeps track of the employee parking garage."

Among all the reasons to upgrade an HRIS system, however, the need to offer flexible benefits stands out. "The buzzwords of the '90s are 'work and family-life considerations,' which translates into more and varied work and payment options," says Williams. "If you don't offer the flexibility that lets people work the hours they want to work, they'll go across town to a competitor who does."

The Bigger Picture

Rohm and Haas, a specialty chemical company in Philadelphia with 12,000 employees, tells a similar story. "We were using a 16-year-old batch system running on an IMS, [IBM's Information Management System, mainframe] database. It was tough to keep the files updated; it was tough to do edits and run reports. Management was having a devil of a time getting up-to-date information," explains Doug Perry, manager of a new group at Rohm and Haas called the Human Resources Information Center. "Then we started to see a proliferation of PC databases; everyone was creating his own database to meet his own needs. There was no single repository where employee data was stored correctly and kept current."

Two years ago, Rohm and Haas' director of HR and the chief financial officer led a move to upgrade the HR systems. The company selected a package from Tesseract and created a 10-person Human Resources Information Center (HRIC) to install and maintain the software. But that was only a first step. By fall of next year, the HRIC will have completed a migration to IBM's DB2 relational database. "The whole project, including system design and migration to DB2, will represent an investment of several million dollars," says Perry.

Technically and architecturally, the direction of the new HRIS follows a couple of established trends in the larger IS arena. One of these is the move to distribute processing across a variety of computing platforms. Although most HR applications have some central database re-

The Burgeoning Cost of Employee Benefits

The cost of employee benefits is one of those good news/bad news stories. Today, the average benefits package equals 37% of a U.S. employee's salary—that's about $10,730 per year for an employee earning $29,000. According to the National Chamber Foundation, the research arm of the U.S. Chamber of Commerce, the average benefits package in 1965 was just 21.5% of a worker's salary. That's the bad news. On the positive side, the pace at which benefit costs are growing in relation to salaries has stabilized. Today, both seem to be growing at equal rates.

Still, the dollar costs of benefits are increasing right along with rising salary levels, points out Martin Lefkowitz, director of special projects for the National Chamber Foundation. Moreover, health care insurance costs continue to escalate. In 1979, employers paid an average of $814 per employee for health and dental insurance. In 1988, the average was $2,052 per employee.

"There's been a big shift in the costs of benefits," says Lefkowitz. "Health costs are the big uncontrollable; they are still going up fast. At the same time, many companies have been able to reduce other benefits costs, such as pensions, by moving to newer and more flexible benefits plans. Older firms may be stuck with high pension costs; newer firms tend not to have defined benefits plans. They have defined contribution plans, such as 401k plans."

Each year, the Chamber surveys benefit expenditures as a service to companies concerned about rising costs. Last year, 10,000 companies purchased copies of the survey in order to compare how they rated against other companies in their industry.

This year, it will be easier for companies to make the comparison, thanks to a PC software package called the Employee Benefits Analyzer. The package, developed by the Chamber in conjunction with Decisions Services Inc. of Stamford, Conn., displays a company's costs on various graphs based on survey results. Comparisons can be made by dollars per employee, percentage of salary, industry, company size and region. It also compares costs for various types of benefits, including health care, pension and vacation, and should be available by early summer.

The Employee Benefits Analyzer is available to all companies, including nonmembers, for $75. Contact the U.S. Chamber of Commerce at (800)-638-6582.

quirements, many are departmental applications serving local needs. "A lot of people who touch HR data aren't daily users of it," says Information Sciences' Coleman. "That's why HR applications need consistent and easy user interfaces across a variety of hardware platforms, and why compliance with a tiered architecture, like SAA, is an important HRIS requirement."

The other IS trend embraced by human resources is the use of relational databases. HR staff are, perhaps, the most prolific users of relational database technology. "No one else finds as many different ways to get at the data as Human Resources," notes Coleman.

This is a polite way of saying that HR has a perpetual need for ad hoc reports that would drive an IS staff around the bend if it had to generate each report from scratch. How many contact lens wearers will be affected by a change in health insurance coverage? How much does the company spend per week on unemployment compensation? How many left-handed, French-speaking engineers does the company employ?

"Human resource applications are a lot different than typical accounting applications, where the numbers change but the report format doesn't," says Alden Briscoe, product manager for Oracle Personnel. "Human Resource departments are constantly coming up with reports for one-time situations—usually a report that was completely unforeseen a week ago, and now all of a sudden they need it yesterday."

A Special Relationship with IS

HR's perpetual need for unexpected, ad hoc reports may be what lies at the heart of the close connection that has developed between HR and IS. These days it's not uncommon to hear statements from IS to the effect that it wants to work more closely with user groups. Yet seldom does such talk translate into a specialized support group. But HRIS departments and HR Information Centers are not at all unusual. "The HRIS function is new, but it's already common among companies with 2,000 or more employees," observes Hunter Group's, Judy Dunnington.

"No other department seems to require the liaison with IS that HR does," confirms Thomas S. Wilson, associate director of IS development at Loyola University of Chicago. "Finance may ask for a model, then ask to have it modified once a year. But HR needs a new report every week."

It is precisely this ad hoc reporting capability that stands to attract top management's attention to the new HRIS systems. "Say, for example, a company is reorganizing, divesting itself of some divisions," hypothesizes Oracle's Briscoe. "Management needs to be able to do simulations:

☐ LARGE CORPORATIONS SHELL OUT ANYWHERE FROM $500,000 TO $750,000 FOR THE LATEST HR PACKAGES.

'If we get rid of this division, what will the demographics of the company look like? What will the salary structure look like?' "

Tomorrow's What-If Scenario

Briscoe sketches another scenario, where HR plays a role in deciding whether a company should proceed with an acquisition or merger. The acquiring company would create ad hoc reports from its employee records and those of the target company to simulate the new entity. Such a simulation could presumably show if there was a complementary fit of the people. Or maybe it would show that the two firms had too much overlap and that the acquiring company would need to lay off many senior executives, who would require expensive severance packages. Maybe the whole acquisition would be scuttled based on information provided by human resources.

Is anything like this actually happening? "Probably not—at least not yet," concedes Sidney H. Simon, a veteran of both IS and HR, who helped found the AHRSP 12 years ago. Now a principal with Alexander & Alexander Consulting Group in Los Angeles, Simon believes that this is exactly the sort of strategic support role that HR ought to be playing. In fact, his firm is working on just such an analysis model.

"There's no technical obstacle to doing this kind of analysis," says Simon. "The limitations lie with the ability and creativity to sell the idea to management. When merger and acquisition decisions are analyzed at the board level, the tendency is to focus on financial issues, financial liabilities, not on people issues. But, in fact, it's people and organizational issues that often cause a merger or acquisition to go sour." ▭

David Stamps is a freelance writer based in Minneapolis.

"I tried to withdraw $75, but I got a Dr Pepper instead."

Don't Let Recession Fears Guide You

Your 1990 IS spending plans should probably factor out a recession in the United States. Goods produced by U.S. plants and services rendered by Stateside offices are growing—albeit slowly.

BY MADELINE FRANCHI

Are information systems executives leery about the direction of the U.S. economy this year? You bet. More than a third of executives polled by DATAMATION in its annual IS Budget Survey expect a recession in 1990, and nearly half of those pessimists indicate their spending would be cut as a result, most estimating that a recession would chop 15% off their IS spending plans for 1990.

Executives may not, however, have to reach for the budget-cutting ax. The U.S. economy, although it may be on the brink, is unlikely to fall into the abyss of recession.

The U.S. economy grew 2.9% in 1989, according to the U.S. Commerce Department. The growth in output of goods and services by U.S. producers was in line with Cahners Economics' expectations, leaving its forecasts for this year and next unchanged. The group sees the U.S. economy expanding 2.1% in 1990 and 3.0% in 1991. Cahners believes the U.S. economy has passed through its worst period and is confident that output will grow, albeit slowly, quarter to quarter this year.

Cahners is not alone in that sentiment. Six out of 10 members of the National Association of Business Economists (NABE) panel believe the U.S. economy will avoid a recession over the next three years. Furthermore, the consensus of 51 economists that constitute The Blue Chip Economic Indicators group figure the U.S. gross national product (GNP) will grow at 1.7% in 1990 and 2.4% in 1991.

Mind you, the IS executives who expressed their doubts about the strength of U.S. commerce and industry in 1990 had good reasons to feel that way when DATAMATION polled them at the start of the year. At the time, confusion and uncertainty were the order of the day: economic indicators and interpretations presented conflicting future scenarios.

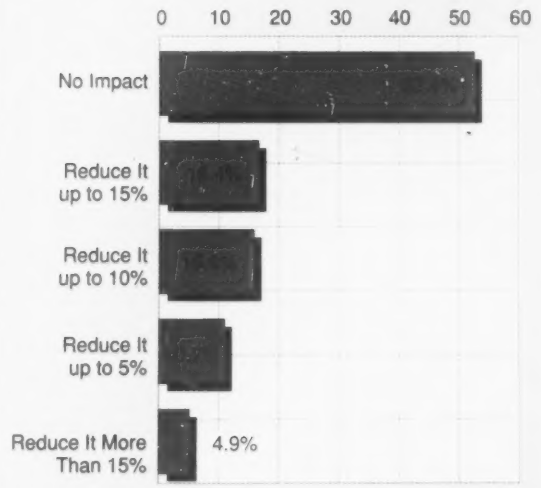
Although the monthly average prime bank rate remained at 10.5% between August and December 1989, other interest rates edged up at a time when economic weakness would have made analysts assume otherwise. Housing starts, another indicator, declined 7% last year—a steeper drop than expected. But it turned out that hurricanes, earthquakes and severely cold weather, more than economic trends, unmercifully hindered construction.

Even now, the risk of recession remains significant. Almost half of the NABE panel of economists believe the risk of a recession increased in the last quarter of 1989. And don't be surprised if you hear a few more disappointing economic numbers for the early part of 1990. Economic signals often waffle and contradict each other around turning points. Yet, all of the shake-ups and uncertainty notwithstanding, Cahners believes the economy will stabilize. ▭

More economic information can be obtained from Cahners Economics Department, 275 Washington Street, Newton, MA 02158, (617)-964-3030.

How a Recession Would Affect IS

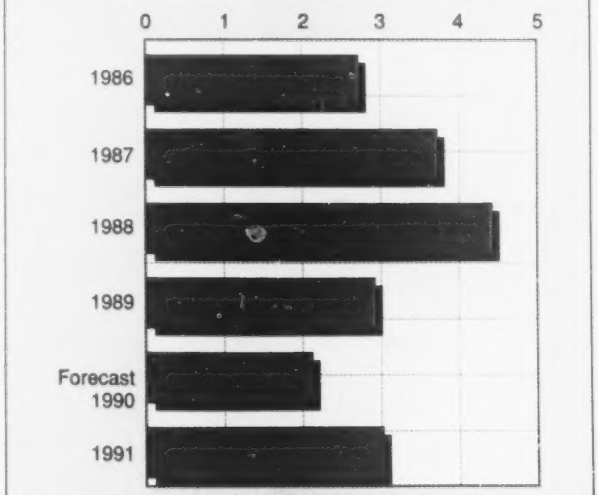
More than half the surveyed IS execs believe their IS budgets would remain unscathed by a U.S. recession.



Source: DATAMATION

Where the U.S. Economy Is Headed

Output of goods and services is expanding slowly.



Source: U.S. Commerce Department (data); Cahners Economics (forecasts)

COMPANY INDEX

This index lists vendors, user groups and industrial associations mentioned in this issue of DATAMATION, excluding those mentioned only in passing. Page numbers refer to the first page of articles.

A
Advanced Computer Communications . . 128
Alexander & Alexander Consulting Group . 47
Altos Computer Systems . . 128
American Management Systems Inc . . 95
AmeriTrust Corp . . 77
Andersen Consulting Co . . 95
Apple Computer Inc . . 37
Artel Communications Inc . . 85
Asea Brown Boveri . . 111
Association of Human Resource Systems Professionals . . 47
AT&T . . 85, 101, 128
Auspex Systems . . 77
B
Banca Popolare di Bergamo . . 77
Bank of America . . 77
Banyan Systems Inc . . 128
Bell Atlantic Corp . . 85
Bell Communications Research Inc . . 85
BellSouth . . 85
BHP Petroleum (Americas) Inc . . 24
Blue Cross and Blue Shield of Kansas City . . 24
Boeing Computer Services Corp . . 85
Bull HN Information Systems Inc . . 128
Burlington Coat Factory . . 58
Burroughs Corp . . 85
C
Campbell Soup Co . . 24
Citroen . . 111
Claris Corp . . 128
Clearpoint Research Corp . . 128
Codex Corp . . 128
Compaq Computer Corp . . 77
Covia Partnerships . . 58
Cowen & Co . . 24
CSC Consulting . . 95
D
Daihatsu . . 111
Datapoint Corp . . 128
Dataquest Inc . . 24
Decisions Services Inc . . 47
Digital Communications Associates Inc . . 69
Digital Equipment Corp . . 24, 77, 95, 101, 115, 128
Distributed Logic Corp . . 128
Dow Chemical Co . . 24
E
Electronic Data Systems Corp . . 95
Ernst & Young . . 85, 115
Evans & Sutherland Computer Corp . . 128
F
Fiat . . 111
Forrester Research Inc . . 77
Foxboro Co . . 101
Frame Technology Corp . . 128
Freeport McMoRan Inc . . 95
FSM . . 111
G
Gartner Group Inc . . 24
General Electric Co . . 111
General Motors Corp . . 111
GKNT (Soviet State Committee for Science and Technology . . 111
Grafpoint . . 69
H
Hallmark Cards Inc . . 24
Hewlett-Packard Co . . 24, 128
Homag . . 111
Hunter Group . . 47
I
IBM . . 24, 37, 47, 58, 77, 95, 101, 115, 128
IDEA . . 128
Index Group . . 95
Information Science Inc . . 47
The Institute of Electrical and Electronics Engineers Inc . . 85
Institute of London Underwriters . . 115
Interactive Images Inc . . 37
Interlink Computer Sciences Inc . . 128
International Data Corp . . 47
IPL Systems Inc . . 128
Isuzu . . 111
J
J.P. Morgan Securities Co . . 69
K
Kalpana Inc . . 128
L
Lloyd's Insurance Brokers Committee . . 115
Lloyd's of London . . 115
Lotus Development Corp . . 101
Loyola University . . 47
M
Mannesmann Tally Corp . . 128
MCI . . 101
Microsoft Corp . . 128
Miller Brewing Co . . 95
Mips Computer Systems Inc . . 24
N
National Chamber Foundation . . 47
National Semiconductor Corp . . 85
NCR Corp . . 77
NEC . . 101
NetFrame Systems . . 77
Nevis Technologies Inc . . 77
New York Life Insurance Co . . 24
NeXT Inc . . 24
Nissan . . 111
Nixdorf Computer AG . . 77
Nokia . . 77
Nolan Norton & Co . . 95
Northern Telecom Ltd . . 101
Nottmeyer . . 111
NYNEX Corp . . 85
O
Odesta Corp . . 128
Oracle Corp . . 47, 58, 128
Owl International Inc . . 69
P
Pacific Bell Co . . 85
Parallax . . 77
Peer Networks . . 77
Philip Morris Co. Inc . . 95
The Plessey Co. Ltd . . 85
Policy Signing and Accounting Centre . . 115
Price Waterhouse . . 47
Q
QPSX Communications Ltd . . 85
QPSX Systems Inc . . 85
R
Rohm and Haas . . 47
S
Securities Industry Automation Corp . . 24
Security Pacific Automation Co . . 77
Security Pacific Corp . . 77
Sequent . . 58, 77
Siemens AG . . 101
Siemens Corp . . 85
Silicon Graphics Computer Systems Inc . . 24
Skoda . . 111
Software Publishing Corp . . 128
Southeastern Bank . . 77
Southern California Gas Co . . 69
Sovran Financial Corp . . 47
Sterling Drug Inc . . 24
Sun Microsystems Inc . . 24, 77
Symantec Corp . . 128
T
Tektronix Inc . . 69, 128
Telecom Australia . . 85
Temple University . . 85
Tesseract Corp . . 47
Texas Instruments Inc . . 24
3M . . 47
Tricord Systems . . 77
Tungsram . . 111
U
U.S. Chamber of Commerce . . 47
U.S. Patent and Trademark Office . . 95
Uniplex Inc . . 69
Unisys Corp . . 85
United Airlines . . 58
United Research Corp . . 95
University of Western Australia . . 85
Up . . 111
V
Volkswagen . . 111
W
Wal-Mart Stores Inc . . 24
Wall Data . . 69
Z
Zamech . . 111

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